

### **Remarks**

Claims 1 and 5 have been amended. Claims 1, 3-7, and 10 are pending.

Examination and reconsideration of the application as amended is requested.

### **§ 103 Rejections**

Claims 1, 3-6, and 10 were rejected under 35 USC § 103(a) as being unpatentable over Tse et al. (U.S. Patent No. 5,227,426). The Patent Office submits that Tse et al. disclose a curable adhesive composition comprising an olefin polymer with pendent functional groups such as carboxyl or amide, and catalysts such as tetrabutyl phosphonium bromide, crown ethers, and/or tetrabutyl ammonium hydroxide. The Patent Office concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to select an effective combination of known catalysts as curing agents and use a commercially available crown ether such as 18-crown-6 ether in the adhesive composition of Tse et al. depending on the particular functional groups and base polymer used, and the curing properties, adhesive, and processing characteristics required by a given application.

Applicant's invention as claimed is a composition for bonding to a fluoropolymer. The bonding composition contains a mixture of a melt-processable, substantially non-fluorinated polymer, base, and crown ether. The base and crown ether are mixed into the polymer; that is, become a part of or are incorporated into the polymer.

Tse et al. disclose adhesives containing a polymer wherein the polymer has an elastomeric backbone and thermoplastic macromonomer side chain grafts. The macromonomers are grafted onto the backbone in a nucleophilic substitution reaction (column 12, lines 64-68). Tse et al. mention the use of a phase transfer catalyst to catalyze the graft of the macromonomer to the backbone. Tse et al. disclose that a phase transfer catalyst is useful in the situation where different solvents or reaction mediums are used for the backbone polymer and the macromonomer (nucleophile) (column 26, lines 24-29; column 28, lines 8-13) or in the situation where the backbone polymer/macromonomer are dissolved in one phase and a simple nucleophilic reagent is dissolved in another (column 29, line 63 - column 30, line 8). In these cases, a phase transfer catalysts is used to promote the nucleophilic reaction at the interface of the two phases. Tse et al.

also disclose that phase transfer catalysts are sometimes beneficial in speeding up a one phase solution reaction (column 30, lines 16-19). Thus, the phase transfer catalyst is used as a "catalyst" in the classical sense; that is, the phase transfer catalyst is not incorporated into the polymeric composition but only used in solution to aid in the reaction. The solvents and soluble catalysts, for example crown ether, are removed when the grafted end product is isolated. Tse et al. nowhere suggest that a phase transfer agent may be used in a bulk reaction or suggest any reason or advantage to use a combination of base and crown ether in a bulk reaction. For at least these reasons, Applicant submits that the claimed invention is patentable over Tse et al. Accordingly, Applicant respectfully requests that the above rejection of claims 1, 3-6, and 10 be withdrawn.

Claims 1, 3-4, 7, and 10 were rejected under 35 USC § 103(a) as being unpatentable over Kubillus et al. (U.S. Patent No. 5,169,979). The Patent Office submits that Kubillus et al. disclose a curable polyester composition suitable for adhesives comprising a polyurethane-based or a polyamide-based resin in combination with catalysts such as sodium or potassium hydroxide, crown ethers, and/or tetrabutylammonium fluoride.

Applicant submits that Kubillus et al. disclose polyester compounds that are the result of the reaction of a carboxylate with a polyol (compound A). The polyol may be the reaction product of excess polyol (monomer) with isocyanates or replacing part of the excess polyol (monomer) with polyamines and reacting with carboxylic acids to form polyurethane polyols and polyamide polyols, respectively. This reaction product is then finally reacted with an acrylate based resin (compound B) then cured to form a coating.

Applicant submits that compound A of Kubillus et al. are polyesters having some polyurethane or polyamide character. Applicant submits that Kubillus et al provide no evidence that such polyester-based compounds would be either melt-processable or thermoplastic. For at least these reasons, Applicant submits that the claimed invention is patentable over Kubillus et al. Accordingly, Applicant respectfully requests that the above rejection of claims 1, 3-4, 7, and 10 be withdrawn.

In view of the above amendments and remarks, Applicant respectfully requests reconsideration of the claims and submit that the claims are in condition for allowance and request formal notice thereof. Examiner is invited to telephone the undersigned at the number

below if Examiner believes that such a call would facilitate prosecution and allowance of the application.

Respectfully submitted,

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Date

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**Version with markings to show amendments made:**

1. (Twice Amended) A bonding composition comprising a mixture of:
  - a) a melt-processable, substantially non-fluorinated **thermoplastic** polymer selected from the group consisting of functionalized polyolefins, polyamides, polyimides, polyurethanes, and mixtures thereof; and
  - b) a catalyst system comprising base and crown ether **mixed within said melt-processable, substantially non-fluorinated polymer.**
  
5. (Amended) The composition of claim [2] **1** wherein the functionalized polyolefin comprises one or more functional groups selected from the group consisting of imide, amide, oxycarbonyl, anhydride, acetate, carbonyl, and hydroxide groups.